●   PATENT APPLICATION

ATTORNEY DOCKET NO. __10980039-2__

IN THE
UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): J. Robert Sims, III, et al.	Confirmation No.: 2844
Application No.:09/753,372	Examiner: G. Portka
Filing Date: 01/02/01	Group Art Unit: 2187

Title: SYSTEMS AND METHODS TO PERFORM DEFECT MANAGEMENT TO BLOCK ADDRESSABLE STORAGE MEDIA

COMMISSIONER FOR PATENTS
Washington, D.C.   20231

RECEIVED

AUG 1 5 2002

TRANSMITTAL OF APPEAL BRIEF

Technology Center 2100

Sir:

Transmitted herewith in **triplicate** is the Appeal Brief in this application with respect to the Notice of Appeal filed on __June 6, 2002__ .

The fee for filing this Appeal Brief is (37 CFR 1.17(c)) $320.00.

(complete (a) or (b) as applicable)

The proceedings herein are for a patent application and the provisions of 37 CFR 1.136(a) apply.

( ) (a) Applicant petitions for an extension of time under 37 CFR 1.136 (fees: 37 CFR 1.17(a)-(d) for the total number of months checked below:

( )	one month	$110.00
( )	two months	$400.00
( )	three months	$920.00
( )	four months	$1440.00

( ) The extension fee has already been filled in this application.

(X) (b) Applicant believes that no extension of term is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition and fee for extension of time.

09/24/2002 EHALL1   00000001 082025   09753372
01 FC:120   320.00 CH

Please charge to Deposit Account **08-2025** the sum of __$320.00__ . At any time during the pendency of this application, please charge any fees required or credit any over payment to Deposit Account 08-2025 pursuant to 37 CFR 1.25. Additionally please charge any fees to Deposit Account 08-2025 under 37 CFR 1.16 through 1.21 inclusive, and any other sections in Title 37 of the Code of Federal Regulations that may regulate fees. A duplicate copy of this sheet is enclosed.

(X) I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, Washington, D.C. 20231. Date of Deposit: __August 6, 2002__

OR

( ) I hereby certify that this paper is being transmitted to the Patent and Trademark Office facsimile number_____ on _____

Number of pages:

Typed Name: **Matthew D. Jones**

Signature: _____

Rev 05/02 (Aplbrief)

Respectfully submitted,

J. Robert Sims, III, et al.

By _____

Matthew D. Jones

Attorney/Agent for Applicant(s)
Reg. No.   44,810

Date: **August 6, 2002**

Telephone No.: **(214) 855-8154**

Docket No.: 10980039-2

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
J. Robert Sims, III, et al.

Application No.: 09/753,372
Filed: January 2, 2001
Group Art Unit: 2187
Examiner: G. Portka

RECEIVED

AUG 1 5 2002

Technology Center 2100

For: SYSTEMS AND METHODS TO PERFORM
     DEFECT MANAGEMENT TO BLOCK
     ADDRESSABLE STORAGE MEDIA

APPELLANTS' BRIEF

Attention: Board of Patent Appeals and Interferences
Commissioner for Patents
Washington, DC 20231

Dear Sir:

This brief is in furtherance of the Notice of Appeal, filed in this case on June 6, 2002.

The fees required under §1.17(f) and any required petition for extension of time for filing this brief and fees therefor, are dealt with in the accompanying TRANSMITTAL OF APPEAL BRIEF.

This brief is transmitted in triplicate.

25187648.1

This brief contains items under the following headings as required by 37 C.F.R. §1.192 and M.P.E.P. §1206:

The final page of this brief bears the attorney's signature.

I.   REAL PARTY-IN-INTEREST

The real party-in-interest for this appeal is:

Hewlett-Packard Company, a California corporation having its principal place of business in Palo Alto, California.

II.   RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences that will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

III.   STATUS OF CLAIMS

A.   Total Number of Claims in Application

There are a total of 30 claims pending in the application, which are identified as claims 1-24 and 35-40.

B.   **Current Status of Claims**

    1.   Claims canceled: 25-34

    2.   Claims withdrawn from consideration but not canceled: None

    3.   Claims pending: 1-24 and 35-40

    4.   Claims allowed: None

    5.   Claims rejected: 1-24 and 35-40

C.   **Claims On Appeal**

The claims on appeal are claims 1-25 and 35-40.

IV.   STATUS OF AMENDMENTS

Appellants filed an Amendment After Final Rejection on May 7, 2002. The Appellee responded to the Amendment After Final Rejection in an Advisory Action mailed May 29, 2002. In the Advisory Action, the Appellee indicated that, for purposes of Appeal, Appellants' proposed amendments to claims 1, 8, 9, 10, 15, 20, and 35 would be entered. Accordingly, the claims enclosed herein as Appendix A do incorporate the aforementioned amendments to claims 1, 8, 9, 10, 15, 20 and 35, as indicated in Appellants' Amendment After Final Rejection.

V.   SUMMARY OF INVENTION

In one embodiment, the invention is directed to a method for providing media defect management. See Application, inter alia, page 6, lines 1-2. The method comprises providing a user area parameter defining a user data area on the media, providing a replacement area parameter defining a user data replacement area on the media, wherein the user data replacement area on the media defined by the replacement area parameter may be null, and selecting the user area parameter and replacement area parameter to determine a particular distributed sparing configuration and thereby defining appropriate defect management. See Application, inter alia, at least page 9, line 5 to page 10, line 28, page 18, line 3 to page 19,

line 27, page 21, line 23 to page 23, line 6, page 29, lines 16-18, and steps 520 and 530 of FIGURE 5.

In another embodiment, the invention is directed to a system for providing media defect management. The system comprises means for providing a user area parameter to define a user data area on the media and means for providing a replacement area parameter to define a user data replacement data area on the media. The user data replacement area on the media defined by the replacement area parameter may be null. Also, the user area parameter and replacement area parameter are selectable to determine appropriate defect management for a particular use of the media. See Application, inter alia, at least at page 9, line 5 to page 10, line 28, page 18, line 3 to page 19, line 27, page 20, line 12 to page 21, line 2, page 21, line 23 to page 23, line 6, page 29, lines 16-18, and system 300 of FIGURE 3.

In yet another embodiment, the invention is directed to a method for providing media defect management for a block addressable bulk storage media. The method comprises providing a spare interval parameter to establish a number of blocks of a user data area on the media, providing a spare length parameter to establish a number of blocks of a user data sparing area on the media, wherein the number of blocks of a user data sparing area established by the spare length parameter may be zero, selecting the spare interval parameter and spare length parameter to determine a particular distributed sparing configuration irrespective of physical zones of the media, and maintaining a list including information identifying each block of the user data sparing area, wherein the list includes information with respect to a status of each block identified. See Application, inter alia, at least at page 7, lines 1-26, page 9, line 5 to page 10, line 28, page 18, line 3 to page 19, line 27, page 20, lines 1-11, page 21, line 23 to page 23, line 6, page 29, lines 16-18, and steps 520, 530, and 540 of FIGURE 5.

VI.   ISSUES

The issues remaining are:

Issue 1 – Whether claims 1-6, 9-10, 12-19, 21-22, 24, and 35-40 are anticipated by United States Patent No. 5, 983, 309 issued to Atsatt et al. (hereinafter referred to as *Atsatt*) under 35 U.S.C. §102(e).

Issue 2 – Whether claims 7-8, 11, 20, and 23 depend from unpatentable base claims.

VII.   GROUPING OF CLAIMS

For purposes of this appeal brief only, and without conceding the teachings of any prior art reference, the claims have been grouped as indicated below:

Group Claim(s)
I.   1, 2, 3, 5, 10, 12, 13-17, 22, and 24
II.   4, 18,
III.   6, 19
IV.   9, 21
V.   35-40
VI.   7, 8, 11, 20, 23

The Group II claims (i.e., claims 4 and 18) recite, among other things, limitations related to "information with respect to a defective section of the user data area that has not been recorded within a section of the user data replacement area" that are not recited by the claims of group I. The claims of group II are separately patentable, at least, because the claims of group II contain limitations that are not recited by the claims of group I and these limitations are not disclosed by the cited art.

The Group III claims (i.e., claims 6 and 19) recite, among other things, limitations related to "a plurality of equal in size zones of user data area and user data replacement area" that are not recited by the claims of group I. The claims of group III are separately patentable, at least, because the claims of group III contain limitations that are not recited by the claims of group I and these limitations are not disclosed by the cited art.

The Group IV claims (i.e., claims 9 and 21) respectfully recite, among other things, limitations related to "wherein the user data replacement area . . . is disposed on the media at an address prior to a corresponding user data area" or "wherein the user data replacement area . . . is disposed on the media prior to the user data area" that are not recited by the claims of group I. The claims of group IV are separately patentable, at least, because the claims of group IV contain limitations that are not recited by the claims of group I and these limitations are not disclosed by the cited art.

The Group V claims (i.e., claims 35-40) recite, among other things, limitations related to "selecting the spare interval parameter and the spare length parameter. . . irrespective of physical zones of the media" that are not recited by the claims of group I. The claims of group V are separately patentabie, at least, because the claims of group V contain limitations that are not recited by the claims of group I and these limitations are not disclosed by the cited art.

With respect to the Group VI claims (i.e., claims 7, 8, 11, 20, 23), the claims of group VI are separately patentable, at least, because, as admitted by the Appellee, the claims of group VI contain limitations that are not recited by the claims of group I and these limitations are not disclosed by the cited art.

VIII. ARGUMENTS

A.   Rejections Under 35 U.S.C. §102(e)

Claims 1-6, 9-10, 12-19, 21-22, 24, and 35-40 stand rejected by the Appellee under 35 U.S.C. §102(e) on the basis of *Atsatt*. It is well-settled that to anticipate a claim, the reference must teach every element of the claim, see M.P.E.P. § 2131. Moreover, in order for a prior art reference to be anticipatory under 35 U.S.C. § 102 with respect to a claim, "[t]he elements must be arranged as required by the claim," see M.P.E.P. § 2131, citing *In re Bond*, 15 USPQ2d 1566 (Fed. Cir. 1990). Furthermore, in order for a prior art reference to be anticipatory under 35 U.S.C. §102 with respect to a claim, "[t]he identical invention must be shown in as complete detail as is contained in the . . . claim," see M.P.E.P. § 2131, citing *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913 (Fed. Cir. 1989). Appellants respectfully observe that the rejection does not satisfy these requirements.

Appellants submit that no one embodiment disclosed in *Atsatt*, either expressly or inherently, discloses all of the limitations of claims 1-6, 9-10, 12-19, 21-22, 24, and 35-40. Without conceding that *Atsatt* discloses any other claim limitations, the following discussion sets forth some differences between claims 1-6, 9-10, 12-19, 21-22, 24, and 35-40 and *Atsatt*.

i.   Claims 1, 15, and respective dependent claims

Claim 1 recites, among other features

. . . providing a replacement area parameter defining a user data replacement area on the media, wherein the user data replacement area on the media defined by the replacement area parameter may be null . . .

Claim 15 recites, among other features

... means for providing a replacement area parameter to define a user data replacement area on the media, wherein the user data replacement area on the media defined by replacement area parameter may be null ...

In his Office Action of August 14, 2002 (i.e., the First Office Action), the Appellee argued that the #Slip_R variable described in *Atsatt* teaches the above-recited claim limitations. However, in Appellants' Amendment of November 14, 2001, Appellants demonstrated that *Atsatt* fails to disclose these elements. As part of such Amendment, Appellants' noted how *Atsatt*, at column 9, lines 13-15 states: "The number of slipped sectors per sparing regions is located in #Slip_R". Appellants then explained that, from this statement, it is evident that *Atsatt's* #Slip_R is **not** a replacement area parameter defining a user data replacement area on the media. Instead, #Slip_R defines the amount of slipped sectors within a sparing region, which is not useable as a replacement area. See Appellants' Amendment, page 12.

In response, as part of his Office Action of March 8, 2002 (i.e., the Final Office Action), the Appellee opines that *Atsatt* controls "slip" caused by defects by dispersing sparing regions on the media, and a "sparing region" is a region of valid data sectors followed by a group of spared sectors. In addition, the Appellee argues that, "[t]he Slip field indicates sectors 'reserved for replacing defective sectors' and those already defective". See Final Office Action, page 6. The Appellee further argues that the number of slipped sectors per sparing region is indicated by #Slip_R, which, according to the Appellee, if no sectors are

defective, precisely indicates sectors available for sparing or replacement. See Final Office Action, page 6.

Appellants respectfully disagree with the Appellee's contentions. As an initial matter, Appellants note that the Appellee's arguments do not comport with United States Patent Office Policy. As mentioned earlier, it is well-settled that, in order for a prior art reference to be anticipatory, the elements of the prior art reference must be arranged as required by the claim. See M.P.E.P. § 2131. However, in making the Appellee's arguments, the Appellee is improperly combining features of the system of *Atsatt* in a manner different from that which appears in *Atsatt*. In *Atsatt*, #Slip_R is not even part of the same table as Slip field in the system of *Atsatt*. Slip field is an entry of the Defect Description Table (DDT) (see column 7, line 39 to column 8, line 14), while #Slip_R is an entry of the Physical Zone Table (PZT) (see column 8, line 53 to column 9, line 14). Furthermore, these entries have different purposes and are allotted different sizes (15K for Slip field compared to the 12K reserved for #Slip_R). Thus, in making the above argument, the Appellee is contorting #Slip_R to be one and the same with the Slip Field. However, as can be seen, that is not what is disclosed in *Atsatt*. Because the Appellee is combining features of *Atsatt* in a manner not taught by *Atsatt*, such arguments are improper for a §102 rejection.

Moreover, Appellants note that in contorting *Atsatt* in the aforementioned manner, because such does not appear in *Atsatt*, the Appellee must be using the application-at-issue as a blue print for contorting *Atsatt* in a manner that the Appellee believes discloses the above-recited limitations from claims 1 and 15. However, it is well-settled that is improper to use the application as a blueprint for modifying the cited art. See M.P.E.P. §2143, citing *In re Vaeck*, 20 USPQ2d 1438 (Fed. Cir. 1991).

Moreover, even with this contortion, as will be demonstrated below, *Atsatt* still does not anticipate claims 1 and 15. Furthermore, even if the Appellee relies solely on the Slip field as the basis for the Appellee's §102(e) rejection, such does still not anticipate claims 1 and 15. Appellants note that in the Appellee's Advisory Action, the Appellee discusses the Slip field, but is silent as to #Slip_R. Therefore, the Appellee may now be relying only on

the Slip field as the basis for the Appellee's rejection. However, such is not entirely clear from the Appellee's Advisory Action.

With respect to the #Slip_R, Appellants again point out that *Atsatt,* at column 9, lines 13-15 states: "[t]he number of slipped sectors per sparing regions is located in #Slip_R". As discussed earlier, from this statement, it is evident that *Atsatt*'s #Slip_R is not a replacement area parameter defining a user data replacement area on the media. Instead, #Slip_R defines the amount of slipped sectors within a sparing region, which is not useable as a replacement area.

Moreover, with respect to the Appellee's comment that if no sectors are defective, #Slip_R indicates sectors available for sparing or replacement, Appellants assert that in stating such, the Appellee at least implicitly concedes that *Atsatt*'s #Slip_R fails to define a user data replacement area when defective sectors are present on a media.

Moreover, Appellants assert that in making the argument that if no sectors are defective, #Slip_R indicates sectors available for sparing or replacement, the Appellee is relying on inherency in order to equate #Slip_R to a replacement area parameter. Appellants note that in order to properly establish a rejection based on inherency, "the Examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic <u>necessarily</u> flows from the teachings of the applied prior art," M.P.E.P. § 2112, citing *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis original).

The Appellee's statement that the number of slipped sectors per sparing region precisely indicates sectors available for sparing or replacement, provided that there are no defective sectors, does not reasonably support a conclusion that the #Slip_R value is necessarily a replacement area parameter. As stated in *Atsatt* in column 8, lines 17-21, "these sectors ... are reserved for replacing defective sectors or are themselves defective . . . [I]n other words, if there is a defective sector on one disk and not on another, there must be sufficient slippage to accommodate logical to physical address shifting." Thus, at the very least, *Atsatt* teaches that the #Slip_R value may account for defective sectors along with

sectors reserved for replacing such defective sectors. See the Final Office Action at paragraph 6 ("The Slip field indicates sectors 'reserved for replacing defective sectors' and those already defective"). Thus, at the very least, *Atsatt* explicitly teaches an instance of #Slip_R which accounts for both defective and replacement sectors. As admitted by the Final Office Action, a #Slip_R that accounts for both sectors reserved for replacing defective sectors and defective sectors is not a replacement area parameter. Accordingly, at the very least, #Slip_R of *Atsatt* does not necessarily teach a replacement area parameter. The same holds true for the Slip field.

Furthermore, claims 1 and 15 recite that a user data replacement area is defined by a replacement area parameter. However, column 9, lines 12-14, of *Atsatt* teaches that PZT entry #Slip_R represents the number of slipped sectors per sparing region. Moreover, column 8, lines 55-60 of *Atsatt* teaches that the value of PZT entries, such as #Slip_R, are not used to define media properties, but instead store the information for describing each recording zone on disk media. As such, #Slip_R does not define the number of slipped sectors but instead indicates the number of slipped sectors for informational purposes. Thus, the user data replacement area on the media is not defined by *Atsatt*'s #Slip_R, as respectively recited by claims 1 and 15.

The same holds true for the Slip field of *Atsatt*. *Atsatt* teaches that the Slip field is for representing the number of sectors that have been mapped out on a disk media before a predetermined logical block address (LBA) from the start of a drive (column 8, lines 14-17). As such, the Slip field does not define the number of sectors to be mapped out, but rather, for information purposes only, indicates the number of sectors that have been mapped out. Thus, the Slip field of *Atsatt* does not qualify as the replacement area parameter recited above.

Accordingly, Appellants respectfully submit that *Atsatt* does not disclose, at least, "a replacement area parameter", as recited in claims 1 and 15. Therefore, Appellants assert that for at least the above reasons, independent claims 1 and 15 are patentable over the 35 U.S.C. § 102 rejection of record. Moreover, claims 2, 3, 5, 10, 12, 13, 16, 17, 22, and 24 depend from base claims 1 and 15 respectively, and thus inherit all limitations of their respective base claims. Moreover, each of these claims set forth features and limitations not recited by

Atsatt. Thus, Appellants request that the 35 U.S.C. §102(e) rejection of the aforementioned claims (i.e., the Group I claims) be overturned. Moreover, because the claims of Groups II through IV, as well as those of Group VI, (i.e., claims 4, 6-9, 11, 18, and 19-21) also depend from claims 1 and 15 respectively, the above arguments also apply to the claims of Groups II through IV, as well as those of Group VI.

ii.   Claims 4 and 18

Claim 4 recites, among other features

. . . the information provided by the categorizing step includes

information with respect to a defective section of the user data area

that has not been recorded within a section of the user data

replacement area . . .

Claim 18 recites, among other features

. . . means for providing information with respect to a defective section

of the user data area that has not been recorded within a section of the user

data replacement area . . .

The Appellee argues that status field 31 of *Atsatt* qualifies as the above-recited limitations of claims 4 and 18 (see Final Office Action, pages 3 and 5). Appellants respectfully disagree. *Atsatt* merely teaches that status bit field 31 indicates the status for its associated entry of the DDT. When status bit 31 is low, status for the associated DDT entry is good (i.e., the sector associated with the DDT entry is not defective). When status bit 31 is high, status for the associated DDT 40 entry is a reassigned LBA. See column 7, lines 63 to 67. As can be seen, status bit 31 does not provide, at least, "information with respect to a defective section of the user data area that has not been recorded within a section of the user data replacement area", as recited in claims 4 and 18. Therefore, *Atsatt* fails to teach at least this claim limitation. Accordingly, Appellants request that the 35 U.S.C. §102(e) rejection of claims 4 and 18 be overturned.

iii.   Claims 6 and 19

Claim 6 recites, among other features

. . . wherein the user area parameter and the replacement area parameter
combined define a logical zone such that, if the user area parameter and
the replacement area parameter are selected to be sufficiently small with
respect to a total size of the media, a plurality of equal in size zones of user
data area and user data replacement area are defined on the media . . .

Claim 19 recites, among other features

. . . wherein the user area parameter and the replacement area parameter
combined define a logical zone such that, if the user area parameter
and the replacement area parameter are selected to be sufficiently small
with respect to a total size of the media, a plurality of equal in size zones
of user data area and user data replacement area are defined on the media . . .

The Appellee argues that *Atsatt* teaches the above-recitations from claims 6 and 19 at
column 5, lines 31-41 and column 13, lines 23-30 (see Final Office Action, page 3).
Although the cited passages from *Atsatt* teach dispersing small sparing regions about each
disk media, at the very least, the cited passages say nothing of "equal in size zones of user
data area and user data replacement area", as recited in the above-claims. Accordingly,
Appellants request that the 35 U.S.C. §102(e) rejection of claims 6 and 19 be overturned.

iv.   Claims 9 and 21

Claim 9 recites, among other features

. . . wherein the user data replacement area associated with the replacement
area parameter is disposed on the media at an address prior to a corresponding
user data area associated with the user area parameter. . .

Claim 21 recites, among other features

. . . wherein the user data replacement area associated with the replacement area parameter is disposed on the media prior to the user data area associated with the user area parameter.. . .

The Appellee argues that the above-recitations from claims 9 and 21 are apparent from FIGURE 16A of *Atsatt*. The Appellee also contends that because, in the Appellee's opinion, *Atsatt* teaches that reassigned LBAs may be designated as desired, either the user data area or sparing area of *Atsatt* may be disposed on the media first. In support of such, the Appellee cites column 8, lines 40-43.

Appellants disagree with the Appellee's contentions. Column 8, lines 40-43 of *Atsatt* simply teaches that a DDT entry for a reassigned sector is associated with that reassigned sector. In addition, the cited passage teaches that each DDT entry associated with a reassigned sector has an LBA value equal to an LBA value of the reassigned sector. As can be seen, such does not teach that reassigned LBAs may be designated as desired, as argued by the Appellee. Moreover, such passage does not teach, at least, "the user data replacement area . . . is disposed on the media at an address prior to a corresponding user data area" or "the user data replacement area . . . is disposed on the media prior to the user data area", as respectively recited in claims 9 and 21.

Moreover, the sparing areas illustrated in FIGURE 16A are all located subsequent to user data areas. Accordingly, FIGURE 16A fails to teach the above-recitations from claims 9 and 21 as well.

Thus, *Atsatt* does not disclose, at least, "wherein the user data replacement area . . . is disposed on the media at an address prior to a corresponding user data area" or "wherein the user data replacement area . . . is disposed on the media prior to the user data area", as respectively recited in claims 9 and 21. Because *Atsatt* fails to teach at least the above-recited elements of claims 9 and 21, Appellants request that the 35 U.S.C. §102(e) rejection of claims 9 and 21 be overturned.

v.   **Claims 35 and dependent claims**

Claim 35 recites, among other features

. . . providing a spare length parameter to establish a number of blocks
of a user data sparing area on the media, wherein the number of blocks
of a user data sparing area established by the spare length parameter
may be zero . . .

. . . selecting the spare interval parameter and spare length parameter to
determine a particular distributed sparing configuration irrespective of
physical zones of the media . . .

In his Office Action of August 14, 2002 (i.e., the First Office Action), the Appellee
argued that the #Slip_R variable described in *Atsatt* teaches the "spare length parameter" of
claim 35. Moreover, the Appellee argued that column 4, lines 8-9, column 9, lines 26-29,
column 13, lines 23-30 and Figures 12B and 13A of *Atsatt* disclose the "selecting" recited
above. In particular, the Appellee opined that #LBA_R, #Slip_R, and Cslip of *Atsatt* allow
the setting up of sparing regions across zones as desired, and thus are selectable to allow
optimizing irrespective of the media zones.

Regarding the "spare length parameter", in Appellants' Amendment of November 14,
2001, Appellants demonstrated that *Atsatt* fails to disclose the "spare length parameter". As
part of such Amendment, Appellants' noted how *Atsatt*, at column 9, lines 13-15 states: "The
number of slipped sectors per sparing regions is located in #Slip_R". Appellants then
explained that, from this statement, it is evident that *Atsatt's* #Slip_R is **not** a spare length
parameter to establish a number of blocks of a user data sparing area on the media. Instead,
#Slip_R defines the amount of slipped sectors within a sparing region, which is not useable as
a sparing area. See Appellants' Amendment, page 12.

In response, as part of his Office Action of March 8, 2002 (i.e., the Final Office
Action), the Appellee opines that *Atsatt* controls "slip" caused by defects by dispersing
sparing regions on the media, and a "sparing region" is a region of valid data sectors followed
by a group of spared sectors. In addition, the Appellee argues that, "[t]he Slip field indicates

sectors 'reserved for replacing defective sectors' and those already defective". See Final Office Action, page 6. The Appellee further argues that the number of slipped sectors per sparing region is indicated by #Slip_R, which, according to the Appellee, if no sectors are defective, precisely indicates sectors available for sparing or replacement. See Final Office Action, page 6.

Appellants respectfully disagree with the Appellee's contentions. As an initial matter, Appellants note that the Appellee's arguments do not comport with United States Patent Office Policy. As mentioned earlier, it is well-settled that, in order for a prior art reference to be anticipatory, the elements of the prior art reference must be arranged as required by the claim. See M.P.E.P. § 2131. However, in making the Appellee's arguments, the Appellee is improperly combining features of the system of *Atsatt* in a manner different from that which appears in *Atsatt*. In *Atsatt*, #Slip_R is not even part of the same table as Slip field in the system of *Atsatt*. Slip field is an entry of the Defect Description Table (DDT) (see column 7, line 39 to column 8, line 14), while #Slip_R is an entry of the Physical Zone Table (PZT) (see column 8, line 53 to column 9, line 14). Furthermore, these entries have different purposes and are allotted different sizes (15K for Slip field compared to the 12K reserved for #Slip_R). Thus, in making the above argument, the Appellee is contorting #Slip_R to be one and the same with the Slip Field. However, as can be seen, this is not what is taught in *Atsatt*. Because the Appellee is combining features of *Atsatt* in a manner not taught by *Atsatt*, such arguments are improper for a §102 rejection.

Furthermore, Appellants note that in contorting *Atsatt* in the aforementioned manner, because such does not appear in *Atsatt*, the Appellee must be using the Application as a blue print for contorting *Atsatt* in a manner that the Appellee believes discloses the "spare length parameter" from claim 35. However, it is well-settled that is improper to use the application as a blueprint for modifying the cited art. See M.P.E.P. §2143, citing *In re Vaeck*, 20 USPQ2d 1438 (Fed. Cir. 1991).

Moreover, even with this contortion, as will be demonstrated below, *Atsatt* still does not teach the "spare length parameter" recited in claim 35. Moreover, even if the Appellee relies solely on the Slip field as the basis for the Appellee's §102(e) rejection, such does still

not anticipate claim 35. Appellants note that in the Appellee's Advisory Action, the Appellee discusses the Slip field, but is silent as to #Slip_R. Therefore, the Appellee may now be relying only on the Slip field as the basis for the Appellee's "spare length parameter" argument. However, such is not entirely clear from the Appellee's Advisory Action.

With respect to the #Slip_R, Appellants again point out that *Atsatt,* at column 9, lines 13-15 states: "[t]he number of slipped sectors per sparing regions is located in #Slip_R". As discussed earlier, from this statement, it is evident that *Atsatt*'s #Slip_R is not spare length parameter to establish a number of blocks of a user data sparing area on the media. Instead, #Slip_R defines the amount of slipped sectors within a sparing region, which is not useable as a sparing area.

Furthermore, with respect to the Appellee's comment that if no sectors are defective, #Slip_R indicates sectors available for sparing or replacement, Appellants assert that in stating such, the Appellee at least implicitly concedes that *Atsatt*'s #Slip_R fails to define a sparing area when defective sectors are present on a media.

Moreover, Appellants assert that in making the argument that if no sectors are defective, #Slip_R indicates sectors available for sparing or replacement, the Appellee is relying on inherency in order to equate #Slip_R to a spare length parameter. Appellants note that in order to properly establish a rejection based on inherency, "the Examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic <u>necessarily</u> flows from the teachings of the applied prior art," M.P.E.P. § 2112, citing *Ex parte Levy,* 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis original).

The Appellee's statement that the number of slipped sectors per sparing region precisely indicates sectors available for sparing or replacement, provided that there are no defective sectors, does not reasonably support a conclusion that the #Slip_R value is necessarily a spare length parameter. As stated in *Atsatt* in column 8, lines 17-21, "these sectors ... are reserved for replacing defective sectors or are themselves defective . . . [I]n other words, if there is a defective sector on one disk and not on another, there must be

sufficient slippage to accommodate logical to physical address shifting." Thus, at the very least, *Atsatt* teaches that the #Slip_R value may account for defective sectors along with sectors reserved for replacing such defective sectors. See the Final Office Action at paragraph 6 ("The Slip field indicates sectors 'reserved for replacing defective sectors' and those already defective"). Thus, at the very least, *Atsatt* explicitly teaches an instance of #Slip_R which accounts for both defective and replacement sectors. As admitted by the Final Office Action, a #Slip_R that accounts for both sectors reserved for replacing defective sectors and defective sectors is not a spare length parameter. Accordingly, at the very least, #Slip_R of *Atsatt* does not necessarily teach a spare length parameter. The same holds true for the Slip field.

Furthermore, claim 35 recites that a user data sparing area is established by a spare length parameter. However, column 9, lines 12-14, of *Atsatt* teaches that PZT entry #Slip_R represents the number of slipped sectors per sparing region. Moreover, column 8, lines 55-60 of *Atsatt* teaches that the value of PZT entries, such as #Slip_R, are not used to define media properties, but instead store the information for describing each recording zone on disk media. As such, #Slip_R does not define the number of slipped sectors but instead indicates the number of slipped sectors for informational purposes. Thus, the number of blocks of a user data sparing area established by #Slip_R as respectively recited by claim 35.

The same holds true for the Slip field of *Atsatt*. *Atsatt* teaches that the Slip field is for representing the number of sectors that have been mapped out on a disk media before a predetermined logical block address (LBA) from the start of a drive (column 8, lines 14-17). As such, the Slip field does not define the number of sectors to be mapped out, but rather, for information purposes only, indicates the number of sectors that have been mapped out. Thus, the Slip field of *Atsatt* does not qualify as the spare length parameter recited above.

Regarding the "selecting the spare interval parameter and spare length parameter . . . irrespective of physical zones of the media", Appellants also disagree with the Appellee. #LBA_R, #Slip_R, and Cslip are all entries of the PZT of *Atsatt*. As mentioned earlier, *Atsatt* teaches that the entries of the PZT table are not used to define media properties, but instead

store the information for describing each recording zone on media. Therefore, such entries do not allow for the above-recited "selecting" from claim 35.

Accordingly, Appellants respectfully submit that *Atsatt* does not disclose a "spare length parameter" or the "selecting" of claim 35. Therefore, Appellants assert that for at least the above reasons, independent claim 35 is patentable over the 35 U.S.C. § 102 rejection of record. Moreover, claims 37-40 depend from base claim 35 respectively, and thus inherit all limitations of claim 35. Moreover, each of these claims set forth features and limitations not recited by *Atsatt*. Thus, Appellants request that the 35 U.S.C. §102(e) rejection of the aforementioned claims (i.e., the Group V claims) be overturned.

B.   Claims Depending From Rejected Base Claims

Claims 7-8, 11, 20, and 23 stand rejected by the Appellee on the basis that such claims depend from, what in the Appellee's opinion are, unpatentable claims. However, the Appellee has noted that such claims would be allowable if rewritten to include all of the limitations of the respective base claims and any intervening claims.

Although Appellants appreciate the Appellee's indication that claims 7-8, 11, 20, and 23 would be allowable if re-written in independent form, Appellants disagree that such claims are not already in condition for allowance in their present form. Claims 7-8, 11, 20, and 23 depend from claims 1, 6, 9, 15, and 21 respectively. As demonstrated above, such claims are patentable over the cited art of record. Therefore, claims 7-8, 11, 20, and 23 are also patentable over the cited art of record in their present form. Therefore, Appellants request that the rejection of claims 7-8, 11, 20, and 23 be overturned.

C.   Conclusion

For the extensive reasons advanced above, Appellants contend that claims 1-24 and 35-40 are patentable. Therefore, reversal of all outstanding rejections is courteously solicited.

IX.   CLAIMS INVOLVED IN THE APPEAL

A copy of the claims involved in the present appeal is attached hereto as Appendix A. As indicated above, the claims in Appendix A do include the amendments filed by Appellants on May 8, 2002.

Appellants believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 08-2025.

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Attention: Board of Patent Appeals and Interferences, Commissioner for Patents, Washington, D.C. 20231, on the date shown below.

Date of Deposit: August 6, 2002

Typed Name: Matthew D. Jones

Signature: _____

Respectfully submitted,

By: _____
       Matthew D. Jones
       Attorney/Agent for Applicant(s)
       Reg. No. 44,810
       Date: August 6, 2002
       Telephone No. (214) 855-8154

APPENDIX A

Claims Involved in the Appeal of Application Serial No. 09/753,372

1.   A method for providing media defect management, said method comprising the steps of:

providing a user area parameter defining a user data area on the media;

providing a replacement area parameter defining a user data replacement area on the media, wherein the user data replacement area on the media defined by the replacement area parameter may be null; and

selecting the user area parameter and replacement area parameter to determine a particular distributed sparing configuration and thereby defining appropriate defect management.

2.   The method of claim 1, further comprising the step of:

maintaining a defect list including information identifying each independently accessible section of user data replacement area on the media.

3.   The method of claim 2, wherein the step of maintaining the defect list includes the step of:

categorizing the independently accessible sections of the user data replacement area in the defect list to provide information with respect to their use in replacing sections of user data areas of the media.

4.   The method of claim 3, wherein the information provided by the categorizing step includes information with respect to a defective section of the user data area that has not been recorded within a section of the user data replacement area.

5.   The method of claim 3, wherein the information provided by the categorizing step prevents chaining of a section of the user data area to multiple sections of the user data replacement area when a section of the user data replacement area becomes defective.

6.   The method of claim 1, wherein the user area parameter and the replacement area parameter combined define a logical zone such that, if the user area parameter and the replacement area parameter are selected to be sufficiently small with respect to a total size of the media, a plurality of equal in size zones of user data area and user data replacement area are defined on the media.

7.   The method of claim 6, wherein a physical address of a particular section of the user data area adjusted for the existence of the logical zone from a logical address used to logically identify the particular section of the user data area may be determined through the result of the mathematical expression:

integer (logical address/user area parameter) x (user area parameter + replacement area parameter) + modulo(logical address/user area parameter) + (offset of user data area).

8.   The method of claim 1, wherein selecting the user area parameter and the replacement area parameter selects from the group of relationships consisting of:

a sum of the user area parameter and the replacement area parameter is approximately a size of the media;

a sum of twice the user area parameter and the replacement area parameter is approximately a size of the media;

a sum of the user area parameter and the replacement area parameter is approximately ½ a size of the media;

a sum of the user area parameter and the replacement area parameter is selected to be small with respect to a size of the media; and

a sum of the user area parameter and the replacement area parameter is approximately the size of an underlying physical zone.

9.   The method of claim 1, wherein the user data replacement area associated with the replacement area parameter is disposed on the media at an address prior to a corresponding user data area associated with the user area parameter.

10.   The method of claim 1, wherein the user data replacement area associated with the replacement area parameter is disposed on the media at an address subsequent to a corresponding user data area associated with the user area parameter.

11.   The method of claim 9, wherein a sum of the user area parameter and the replacement area parameter is selected to be greater than a size of the media to accommodate selection of a desired value of the replacement area parameter.

12.   The method of claim 1, further comprising the step of:

establishing a logical address hierarchy providing logical addressing for physical addresses of sections of the user data area and sections of the user data replacement area, wherein the logical address hierarchy omits physical addresses of sections of data areas determined to be defective, and wherein omission of physical addresses of sections of data areas determined to be defective affects logical addresses of all subsequent sections of data areas on the media.

13.   The method of claim 12, wherein the step of establishing a logical address hierarchy comprises the step of:

generating a defect list including information identifying the sections of the data areas determined to be defective and omitted from the logical address hierarchy.

14.   The method of claim 12, wherein adjustment of the logical addressing for a particular physical address to omit physical addresses of sections of data areas determined to be defective is accomplished in units equivalent to a single user data area section.

15.   A system for providing media defect management, said system comprising:

means for providing a user area parameter to define a user data area on the media; and

means for providing a replacement area parameter to define a user data replacement data area on the media, wherein the user data replacement area on the media defined by the replacement area parameter may be null; and

wherein the user area parameter and replacement area parameter are selectable to determine appropriate defect management for a particular use of the media.

16.   The system of claim 15, further comprising:

means for maintaining a defect list including information identifying each independently accessible section of user replacement data area on the media.

17.   The system of claim 16, wherein the defect list maintaining means includes:

means for categorizing the independently accessible sections of the user data replacement areas in the defect list to provide information with respect to their use in replacing user data areas of the media.

18.   The system of claim 17, wherein the categorizing means includes:

means for providing information with respect to a defective section of the user data area that has not been recorded within a section of the user data replacement area.

19.   The system of claim 15, wherein the user area parameter and the replacement area parameter combined define a logical zone such that, if the user area parameter and the replacement area parameter are selected to be sufficiently small with respect to a total size of the media, a plurality of equal in size zones of user data area and user data replacement area are defined on the media.

20.   The system of claim 15, wherein the user area parameter and the replacement area parameter are selectable from the group of relationships consisting of:

a sum of the user area parameter and the replacement area parameter is approximately a size of the media;

a sum of twice the user area parameter and the replacement area parameter is approximately a size of the media;

a sum of the user area parameter and the replacement area parameter is approximately ½ a size of the media;

a sum of the user area parameter and the replacement area parameter is selected to be small with respect to a size of the media; and

a sum of the user area parameter and the replacement area parameter is approximately the size of an underlying physical zone.

21.   The system of claim 15, wherein the user data replacement area associated with the replacement area parameter is disposed on the media prior to the user data area associated with the user area parameter.

22.   The system of claim 15, wherein the user data replacement area associated with the replacement area parameter is disposed on the media subsequent to the user data area associated with the user area parameter.

23.   The system of claim 21, wherein a sum of the user area parameter and the replacement area parameter is selected to be greater than a size of the media to accommodate selection of a desired value of the replacement area parameter.

24.   The system of claim 15, further comprising:

means for establishing a logical address hierarchy providing logical addressing for physical addresses of data areas on the media for use as the user data area associated with the user area parameter and the user data replacement data area associated with the replacement area parameter, wherein the logical address hierarchy omits physical addresses of data areas determined to be defective, and wherein omission of physical addresses of data areas determined to be defective affects logical addresses of all subsequent data areas on the media.

35.   A method for providing media defect management for a block addressable bulk storage media, said method comprising the steps of:

providing a spare interval parameter to establish a number of blocks of a user data area on the media;

providing a spare length parameter to establish a number of blocks of a user data sparing area on the media, wherein the number of blocks of a user data sparing area established by the spare length parameter may be zero;

selecting the spare interval parameter and spare length parameter to determine a particular distributed sparing configuration irrespective of physical zones of the media; and

maintaining a list including information identifying each block of the user data sparing area, wherein the list includes information with respect to a status of each block identified.

36.   The method of claim 35, wherein the information with respect to a status of each block includes information with respect to a defective block of the user data area that has not been recorded within a block of the user data replacement area.

37.   The method of claim 36, further comprising the step of:

establishing a logical address hierarchy of the blocks of the media wherein physical addresses of blocks initially determined to be defective are not included in the logical address hierarchy, and wherein all logical addresses corresponding to a physical address subsequent to a block initially determined to be defective are adjusted at least an address space of the block initially determined to be defective.

38.   The system of claim 15, wherein the distributed sparing configuration is determined irrespective of a geometric arrangement of data storage elements due to a physical structure of the media.

39.   The method of claim 35, wherein the step of selecting the spare interval parameter and the spare length parameter defines appropriate defect management for a particular use of the media.

40.   The method of claim 1, wherein the step of selecting the user area parameter and replacement area parameter is performed independent of data segment boundaries on the media arising from geometric characteristics of the media.